

14  
"Made available under NASA sponsorship  
in the interest of early and wide dis-  
semination of Earth Resources Survey  
Program information and without liability  
for any use made thereof."

Enclosure (1) to BxA  
Letter 72-141-922  
Contract # NAS 5-21762

E 72 - 1 0 0 6 9  
CR - 128084

FIRST TYPE 1 PROGRESS REPORT  
(Period: Start to 5 August 1972)

- a. TITLE: Ecological Effects of Strip Mining in Ohio, GSFC UN 616,  
SR 309, Dr. Wayne Pettyjohn.
- b. Objectives:
1. To map the acreage stripped or otherwise disturbed by coal mining operations in southern and eastern Ohio.
  2. To detect, identify, and map the secondary effects of coal mining operation (strip) on the environment. These include erosion, vegetative stress, and sedimentation in rivers and lakes. The effects of water drainage and mine acid seepage are also of interest.
  3. To study the after-effects of mining operations and compare recovery time and effectiveness with which mined areas are restored to usefulness.
  4. To investigate the feasibility of transfer of knowledge gained by this study of Ohio to other strip mining regions of the U. S.
- c. There are no problems impeding the progress of the investigation.
- d. Accomplishments:

(1) Preparation of Ground Truth Maps.

A series of maps at a scale of 1 inch = 1 mile have been prepared that will serve as a basis for ground truth examination and interpretation of ERTS 1 imagery. The various sets of maps in the entire series are as follows:

1. Maps representing the periods 1950-51, 1966, 1970-71, show the area stripped and outlined, the waste or gob piles and the

(E72-10069) ECOLOGICAL EFFECTS OF STRIP MINING IN OHIO Progress Report, period ending 5 Aug. 1972 P.E. Chase (Bendix Corp.) 5 Aug. 1972 3 p	CSC 08G	N72-31353
	G3/13	Unclas 00069

mine highwalls if present. These maps are based on the interpretation of aerial photographs.

2. Published maps showing the aerial extent of underground mine workings as of 1968.
3. Published geologic maps of two countries.
4. County highway road maps.

Data on map 2 will eventually be transcribed on map 1.

(2) Preparation of Software to Accept CCT

Work (software) has been completed to receive Bulk MSS CCT for processing by the Bendix 370-155 computer and additional processing equipment.

(3) Activities planned for the next reporting period are:

1. Preparation stratigraphic and rock type information of the test area.
  2. Develop a short narrative history of the mining operations.
  3. Screen the initial data received (none as yet) for determination of additional data requests. Perform additional data analysis to obtain both extent of mining operations and minimum size of operation detectable.
- e. Activities to date have been directed towards being prepared for receipt of ITOS I data. Therefore, results significant for practical applications and cost-benefit analysis have not been obtained as yet.
- f. No release of information or requests for permission to release of information have been made during the reporting period.
- g. A copy of a letter to Dr. Wayne Pettyjohn has been received indicating the change of Principal Investigator from Dr. Wayne Pettyjohn to Phillip E. Chase of Bendix. Original letter (to Dr. Wayne Pettyjohn dated May 19, 1972) was signed by Charles W. Matthews. If the above change is official, then notification of it to Goddard Space Flight Center would be helpful. Dr. Pettyjohn is receiving information and requests as the PI. Progress is not impeded at this time but delays in analysis will result because Bendix will perform the data processing of the imagery in the computer compatible tapes (CCT).

- i. Attachment of ERTS Image Descriptor Forms is not applicable as yet.
- j. No retrospective Data Request Forms have been submitted.
- k. Work to date conforms to schedule. (Item C in paragraph 3. 1 of spec 5-250-P-1C).

